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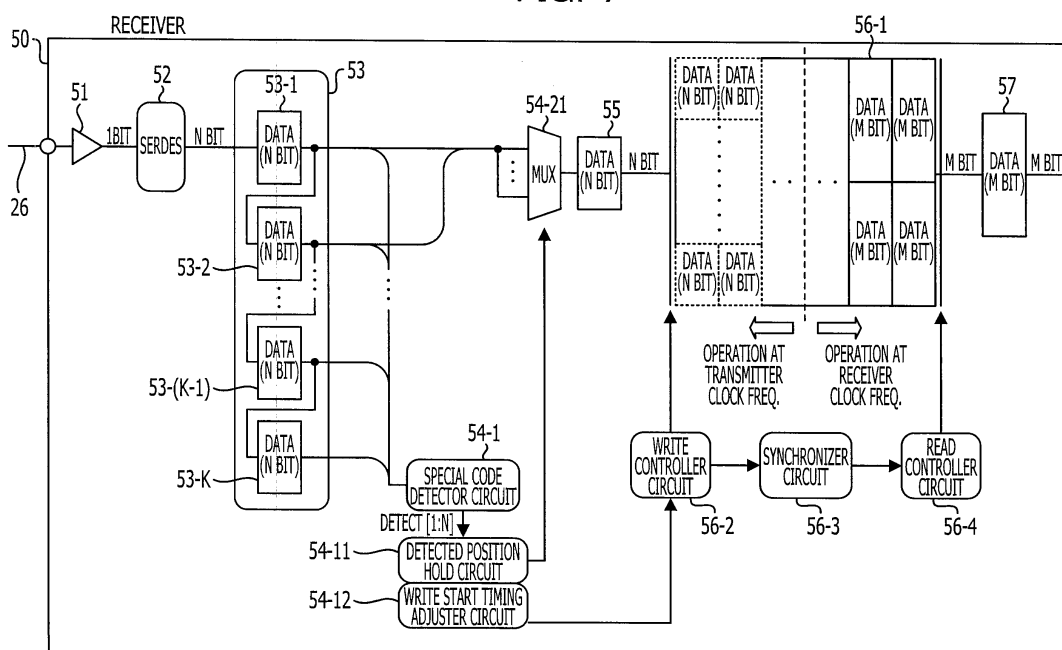
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(54) **Serial data receiver circuit apparatus and serial data receiving method**

(57) A serial data receiver circuit apparatus to receive serial data delimited by a first bit length, the circuit apparatus includes: a serial/parallel converter circuit to convert the serial data into parallel data of a second bit length that is smaller than the first bit length; a data hold circuit to hold a plurality of parallel data; a detector circuit to

detect a delimiter position in the received serial data; a detected position hold circuit to generate a select signal to select data included in the parallel data stored in the data hold circuit; and a selector circuit to select data in units of the second bit length starting from the data delimiter position based on the select signal.

FIG. 7





EUROPEAN SEARCH REPORT

Application Number
EP 11 15 3586

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 0 397 142 A1 (ALCATEL NV [NL]) 14 November 1990 (1990-11-14)	1-3	INV. H04L7/04
Y	* abstract *	4,5	
	* column 1, line 50 - column 4, line 2 *		
	* column 5, line 51 - column 10, line 55 *		
	* figures 1,3,4,6 *		
A	----- EP 0 249 935 A2 (FUJITSU LTD [JP]) 23 December 1987 (1987-12-23)	1-3	
	* abstract *		
	* column 4, line 19 - column 8, line 16 *		
	* figures 1-4 *		
Y	----- US 2009/323878 A1 (KONISHI SHINYA [JP] ET AL) 31 December 2009 (2009-12-31)	4,5	
A	* abstract *	1-3	
	* figures 1-4 *		
	* paragraph [0021] - paragraph [0039] *		
X	----- US 2004/057539 A1 (BOLES GLENN M [US] ET AL) 25 March 2004 (2004-03-25)	6-8	TECHNICAL FIELDS SEARCHED (IPC)
Y	* abstract *	4,5	H04L
	* paragraph [0022] - paragraph [0033] *		
	* paragraph [0037] - paragraph [0038] *		
	* figures 2-6 *		

The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 December 2011	Examiner Moser, Jochen
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)



Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3

detection of delimiter positions in a received serial data stream, wherein the detection processing is done based on a plurality of comparator circuits using data units having a bit length smaller than the bit length of the data contained in the serial bit stream.

2. claims: 4-8

transferring data from one clock domain to a second clock domain by use of a clock transfer buffer, wherein data is written into the clock transfer buffer according to the clock of the first clock domain and read out of the clock transfer buffer according to the clock of the second domain.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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15-12-2011

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0397142	A1	14-11-1990	AU	627575 B2		27-08-1992
			AU	5468590 A		15-11-1990
			CA	2016643 A1		12-11-1990
			EP	0397142 A1		14-11-1990
			US	5081654 A		14-01-1992

EP 0249935	A2	23-12-1987	CA	1260167 A1		26-09-1989
			DE	3788457 D1		27-01-1994
			DE	3788457 T2		19-05-1994
			EP	0249935 A2		23-12-1987
			JP	1914315 C		23-03-1995
			JP	6038597 B		18-05-1994
			JP	63107247 A		12-05-1988
			NZ	220548 A		28-05-1990
			US	4748623 A		31-05-1988

US 2009323878	A1	31-12-2009	JP	2010010854 A		14-01-2010
			US	2009323878 A1		31-12-2009

US 2004057539	A1	25-03-2004	NONE			
